CLAIMS

We claim:

[c1] 1. A method for specifying alternate layouts of an element of a display description specified using a display description language, the method comprising:

providing a definition of the element;

providing a first condition and a first layout for the definition of the element;

providing a second condition and a second layout for the definition of the element; and

when processing the definition of the element,

displaying the element in accordance with the first layout when the first condition is satisfied; and

displaying the element in accordance with the second layout when the second condition is satisfied.

[c2] 2. The method of claim 1 wherein the element has a class and the conditions and layouts are provided in a style for that class.

[c3] 3. The method of claim 2 wherein the conditions and layouts are attributes of an element for that class.

[c4] 4. The method of claim 1 wherein the conditions and layouts are provided as attributes within the definition of the element.

[c5] 5. The method of claim 1 wherein the element has child elements and the layouts specify the layout of the child elements.

[c6]   6.   The method of claim 5 wherein a layout is from a group consisting of vertical layout, horizontal layout, vertical flow layout, and horizontal flow layout.

[c7]   7.   The method of claim 5 wherein a layout specifies a table in which the child elements are to be displayed.

[c8]   8.   The method of claim 7 wherein the layout that specifies a table further specifies a cell within the table for a child element.

[c9]   9.   The method of claim 7 wherein the layout that specifies a table further specifies that a cell for a child element is to be automatically selected.

[c10]   10.   The method of claim 7 wherein the layout that specifies a table further specifies a cell within the table for a child element and another cell for another child element is to be automatically selected.

[c11]   11.   The method of claim 1 wherein the display description language is XML based.

[c12]   12.   The method of claim 1 wherein the display description language is HTML based.

[c13]   13.   A computer system for specifying alternate layouts of an element of a display description, comprising:

> a display description having a definition of the element and condition and layout pairs for the element; and

> a display component that generates a display based on the display description by displaying the element in accordance with a layout of a pair when the condition of the pair is satisfied.

[c14]   14.   The computer system of claim 13 wherein the element has a class and the condition and layout pairs are specified in a style for that class.

[c15]   15.   The computer system of claim 14 wherein the condition and layout pairs are attributes of an element for that class.

[c16]   16.   The computer system of claim 13 wherein the condition and layout pairs are attributes within the definition of the element.

[c17]   17.   The computer system of claim 13 wherein the element has child elements and the layouts specify the layout of the child elements.

[c18]   18.   The computer system of claim 17 wherein a layout is from a group consisting of vertical layout, horizontal layout, vertical flow layout, and horizontal flow layout.

[c19]   19.   The computer system of claim 17 wherein a layout specifies a table in which the child elements are to be displayed.

[c20]   20.   The computer system of claim 19 wherein the layout that specifies a table further specifies a cell within the table for a child element.

[c21]   21.   The computer system of claim 19 wherein the layout that specifies a table further specifies that a cell for a child element is to be automatically selected.

[c22]   22.   The computer system of claim 19 wherein the layout that specifies a table further specifies a cell within the table for a child element and another cell for another child element is to be automatically selected.

[c23]   23.   The computer system of claim 17 wherein each child element is only defined once within the element.

[c24]   24.   The computer system of claim 23 wherein a layout specifies the layout of the child elements.

[c25]   25.   A method for specifying alternate layouts of child elements of an element using a display description language, the method comprising:

providing a child element layout attribute for specifying the layout of child elements of an element, the child element layout attribute having at least two attribute values that specify different layouts for the child elements;

providing a style for a class of elements, the style specifying a first attribute value for the child element layout property when a first condition is satisfied and a second attribute value for the child element layout property when a second condition is satisfied; and

when processing an element of the class,

when the first condition is satisfied, laying out the child elements of the element in accordance with the first attribute value of the child element layout property; and

when the second condition is satisfied, laying out the child elements of the element in accordance with the second attribute value of the child element layout property.

[c26]   26.   The method of claim 25 wherein an attribute value is selected from a group consisting of vertical layout, horizontal layout, vertical flow layout, and horizontal flow layout.

[c27]   27.   The method of claim 25 wherein the conditions and layouts can be modified without modifying the definition of the element.

[c28]   28.   The method of claim 25 wherein the display description language is a markup language.

[c29]   29.   The method of claim 25 wherein the display description language is XML based.

[c30]   30.   The method of claim 25 wherein the display description language is HTML based.

[c31]   31.   A method in a computer system for positioning cells within a table, the method comprising:

providing a definition in a display description language of content of an element having child elements;

providing a specification in the display description language that the content of the element is to be laid out as a table, the specification of layout being not integrated with the provided definition of the content of the element; and

when processing the definition of the content of element,

generating a table having cell positions;

automatically identifying a cell position for each child element; and

placing content defined by each child element in the identified cell position for that child element.

[c32]   32.   The method of claim 31 wherein a child element has a position attribute that identifies a cell with the table and including placing the content defined by that child element in the cell identified by the position attribute.

[c33]   33.   The method of claim 32 wherein the position attribute value identifies a cell position by a row identifier and a column identifier.

[c34]   34.   The method of claim 32 wherein automatically identifying a cell position for a child element factors in a cell position for another child element specified in a position attribute.

[c35]   35.   The method of claim 34 wherein the position attribute value is selected based on a condition.

[c36]   36.   The method of claim 35 wherein the condition is whether the table is oriented horizontally or vertically.

[c37]   37.   The method of claim 31 wherein the position attributes for the child elements are specified in a style that is applied when the element is processed.

[c38]   38.   The method of claim 37 wherein the style specifies position attribute values that are selected conditionally.

[c39]   39.   The method of claim 38 wherein the condition is whether the table is oriented horizontally or vertically.

[c40]   40.   A computer-readable medium containing a data structure specifying alternate layouts of an element, the data structure comprising:

a definition of an element;

a first condition and a first layout associated with the element; and

a second condition and a second layout associated with the element

wherein the element is laid out in accordance with the first layout when the first condition is satisfied and with the second layout when the second condition is satisfied.

[c41]   41.   The computer-readable medium of claim 40 wherein the conditions and layouts are defined in a style associated with the element.

[c42]   42.   The computer-readable medium of claim 41 wherein the style is associated with the element based on a class.

[c43]   43.   The computer-readable medium of claim 40 wherein the conditions and layouts are defined as attributes of the element.

[c44]   44.   The computer-readable medium of claim 40 wherein the element has child elements and the layout specifies the layout of the child elements.

[c45]   45.   The computer-readable medium of claim 40 wherein the data structure is specified using a display description language.

[c46]   46.   The computer-readable medium of claim 40 wherein the data structure is specified using XML.

[c47]   47.   The computer-readable medium of claim 40 wherein the data structure is specified using HTML.

[c48]   48.   A method performed by a computer system for specifying layout of an element of a display description specified using a display description language, the method comprising:

providing a definition of content of the element;

providing a specification of the layout of the content, the specification of the layout being separate from the definition of the content; and

when processing the definition of the content, rendering the content in accordance with the specification of the layout of the content.

[c49]   49.   The method of claim 48 wherein the layout of the content can be modified by changing the specification of the layout without changing the definition of the content of the element.

[c50]   50.   The method of claim 48 wherein the content has a class and the specification of the layout is provided in a style for that class.

[c51]   51.   The method of claim 50 wherein different occurrences of content of that class share the style.

[c52]   52.   The method of claim 48 wherein the specification of the layout indicates that the layout is conditional.

[c53]   53.   The method of claim 48 wherein the specification of the layout specifies how child elements of the content are to be ordered.

[c54]   54.   The method of claim 48 wherein the display description language is XML based.

[c55]   55.   The method of claim 48 wherein the display description language is HTML based.